

AWIPS TIPS FOR IMPROVED SYSTEM PERFORMANCE

The following is a checklist of actions which can be performed to ensure that your AWIPS system is operating at optimum performance. These actions can be performed prior to anticipated severe weather.

- ☐1. On the Linux workstations, every Day shift (And every shift prior to Severe Weather) reset the X Server:
 - A. Exit all D2D and applications running on the workstation.
 - B. Log out of the workstation so that you return to the Login Screen.
 - C. Simultaneously press the <Ctrl>, <Alt> and <Backspace> keys to reset the X Server. All 3 graphic screens on the Linux workstation should temporarily go blank as the current X Server is terminated and a new X Server is restarted.
- ☐2. On the HP text workstations, every Day shift (And every shift prior to Severe Weather) reset the X Server:
 - A. Exit all D2D and applications running (Including Text) and then log out of the workstation.
 - B. Reboot the HP text workstation by powering off and then powering on the HP text workstation.
- ☐3. Contact the NCF (301-713-9344) and notify the NCF that you will be stopping and restarting the ingest processes on the servers. The NCF receives alarms whenever ingest processes are stopped and restarted. Your phone call will notify the NCF that the ingest processes which are being terminated is a planned activity and not a software fault which must be corrected by the NCF.

This is also an appropriate time to ask the NCF to place your site in Critical Weather Monitoring.
- ☐ 4. Before a Severe Weather shift, restart all processes on the DS and AS servers. If the ESA, SOO, ITO or AFP are not in the office, the staff (Lead Forecaster decision) can call NCF and ask the NCF to restart the processes.

A recommended procedure for restarting all processes on the DS and AS servers is as follows:

Step A: As the *root* user on the *DS1* server, run the *cmviewcl* command to verify that the swap packages are running in a normal configuration. Here is an example of the *cmviewcl* command from the *ds1-nhow* system which can be used as a reference.

The first section of this *cmviewcl* example output indicates that the AS1 server is hosting the *as1swap* package:

NODE	STATUS	STATE
as1-nhow	up	running

PACKAGE	STATUS	STATE	PKG_SWITCH	NODE
as1swap	up	running	enabled	as1-nhow

The second section of this *cmviewcl* example output indicates that the AS2 server is hosting the *as2swap* package:

NODE	STATUS	STATE
as2-nhow	up	running

PACKAGE	STATUS	STATE	PKG_SWITCH	NODE
as2swap	up	running	enabled	as2-nhow

The third section of this *cmviewcl* example output indicates that the DS1 server is hosting the *dsswap* package and the DS2 server is running and available for a DS1→DS2 failover:

NODE	STATUS	STATE
ds1-nhow	up	running

PACKAGE	STATUS	STATE	PKG_SWITCH	NODE
dsswap	up	running	enabled	ds1-nhow

NODE	STATUS	STATE
ds2-nhow	up	running

If the *as1swap*, *as2swap* and *dsswap* swap packages are not running on the AS1, AS2 and DS1 servers respectively, contact the NCF.

Step B: To restart the fxa ingest processes running on the DS1 server, enter the following commands as the *fxa* user on the *DS1* server:

```
stopIngest.ds1
stopTextDB.ds1
ps -ef | grep fxa      (verify all fxa ingest processes are terminated before restarting)
startTextDB.ds1
startIngest.ds1
```

Step C: To restart the ldad ingest processes on the DS1 and LS1 servers, enter the following commands as the *ldad* user on the *DS1* server:

```
stopLDAD.sh
ps -ef | grep ldad      (verify all ldad ingest processes are terminated before restarting)

remsh ls1 "ps -ef | grep ldad" (verify all baseline ldad ingest processes are terminated
                                before restarting. The suaReceiver,
                                watchDogExternal.sh, CO_serv,
                                newLDADdataNotification, MakePROCpage and
                                MakeLDAPage processes should not be running)

startLDAD.csh
```

Step D: To restart the fxa ingest processes running on the AS1 server, enter the following commands as the *fxa* user on the *AS1* server:

```
stopIngest.as1
stopTextDB.as1
ps -ef | grep fxa      (verify all fxa ingest processes are terminated before restarting)
startTextDB.as1
startIngest.as1
stopNotificationServer
startNotificationServer
```

Step E: To restart the fxa ingest processes running on the AS2 server, enter the following commands as the *fxa* user on the *AS2* server:

```
stopIngest.as2
ps -ef | grep fxa      (verify all fxa ingest processes are terminated before restarting)
startIngest.as2
```

- ☐5. Before a Severe Weather shift, restart all processes on the PX servers. If the ESA, SOO, ITO or AFP are not in the office, the staff (Lead Forecaster decision) can call NCF and ask the NCF to restart the processes.

A recommended procedure for restarting all processes on the PX servers is as follows:

Step A: As the *root* user on the *PX1* server, run the *clustat* command to verify that the cluster status on px1 is running in a normal configuration. Here is an example of the clustat command from the px1-nhow system which can be used as a reference. This clustat example output indicates that the px1 server is running the px1apps service:

```
Cluster Status Monitor (awips)                19:39:00

Cluster alias: Not Configured

===== M e m b e r   S t a t u s =====

  Member      Status  Node Id  Power Switch
  -----
  px1-nhow     Up      0       Good
  px2-nhow     Up      1       Good

===== H e a r t b e a t   S t a t u s =====

  Name                Type      Status
  -----
  px1-beat <--> px2-beat  network  ONLINE
  /dev/ttyS1 <--> /dev/ttyS1  serial   ONLINE

===== S e r v i c e   S t a t u s =====

                Last      Monitor Restart
  Service      Status  Owner      Transition  Interval Count
  -----
  px1apps      started px1-nhow    18:02:10 Feb 21 0    0
  px2apps      started px2-nhow    18:12:03 Feb 21 0    0
```

If the px1 cluster is not running in a normal configuration, contact the NCF.

Step B: As the *root* user on the *PX2* server, run the *clustat* command to verify that the cluster status on px2 is running in a normal configuration. Here is an example of the clustat command from the px2-nhow system which can be used as a reference.

This example indicates that the px2 server is running the px2apps service:

```

Cluster Status Monitor (awips)                                19:46:00

Cluster alias: Not Configured

===== M e m b e r   S t a t u s =====

Member      Status   Node Id   Power Switch
-----
px1-nhow     Up       0         Good
px2-nhow     Up       1         Good

===== H e a r t b e a t   S t a t u s =====

Name          Type      Status
-----
px1-beat  <--> px2-beat  network  ONLINE
/dev/ttyS1  <--> /dev/ttyS1  serial   ONLINE

===== S e r v i c e   S t a t u s =====

Service      Status   Owner      Last Monitor Restart
-----
px1apps      started px1-nhow   18:02:10 Feb 21 0      0
px2apps      started px2-nhow   18:12:03 Feb 21 0      0

```

If the px2 cluster is not running in a normal configuration, contact the NCF.

Step C: To restart the fxa ingest processes on the PX1 server, enter the following commands as the *fxa* user on the *PX1* server:

```
stopIngest.px1
ps -efw | grep fxa    (verify all fxa ingest processes are terminated before restarting)
startIngest.px1
```

Step D: To restart the fxa ingest processes on the PX2 server, enter the following commands as the *fxa* user on the *PX2* server:

```
stopIngest.px2
ps -efw | grep fxa    (verify all fxa ingest processes are terminated before restarting)
startIngest.px2
```

- ☐ ...6. Test WarnGen. This is especially important if WarnGen has not been used in a while or recent software changes have been made to AWIPS. There are various AWIPS configuration changes, software installs, or localizations that may have adversely affected WarnGen without your knowledge. Start a WarnGen session, select your items on the WarnGen menu, manipulate the warning box, and press "Create Text". Verify that the warning looks OK in the text window. Depending on the circumstances and local operational procedures, you may want to transmit a test warning and check that it was disseminated. Be certain that the product is clearly identified as a test! If it's not appropriate to transmit the test, then exit.
- ☐7. **If you have not already asked the NCF to perform Critical Weather Monitoring on your AWIPS system, call the NCF (301-713-9344) and request that service.**
- ☐8. There is a significant performance cost when utilizing Informix fxatext triggers. To maintain an acceptable level of performance on the DS, the use of triggers should be minimized. To speed up the DS, for all triggers, use the textdb -w if necessary. Do not use the textdb -r option on any of them. Also only run a trigger once per PIL. If you need to run multiple applications on the same PIL, use the C-Shell or Posix shell script to run all applications. This way your number of triggers is much smaller.
- ☐9. Tweaking the number of frames to loop in the small panes of D2D, helps free up memory, but does take longer to reload after swapping panes.

☐10. There have been some comments that the WarnGen text window takes some time to pop up on the text workstation during a severe weather event. Here is a list of performance tips to try to speed up the text window/workstations.

A. If you have time before the weather reaches your area, close all windows and programs running on the text workstation. Logout of the workstation and power off the text workstation, then turn the power back on.

B. Exit out of the Monitoring and Controller window. This should not be running on your warning workstation.

C. Make sure the Update Obs feature is not turned on in any of the text windows.

D. Do not run any other local applications on your text workstation.

E. Limit the number of looping frames in your D2D windows. If you can, do not loop products in the small panes.

F. Limit the number of alerts you send to that text workstation.

☐11. Delete old products from the Informix fxatext database. Over time, the Informix fxatext database accumulates a bunch of old, obsolete products. Because there is no standard procedure for deleting obsolete products from the database, the database tends to grow until it fills to 100% capacity. When the Informix fxatext database approaches 100% capacity, the standard procedure is to drop the database and then initialize the database from scratch with a completely empty database. Once the database is dropped, it is usually good for a year or 2 until it once again reaches 100% capacity.

The following is a proactive procedure which can be used to remove old, obsolete products from the Informix fxatext database before the database reaches 100% capacity. This procedure uses 2 scripts which were delivered with OB3: db-diagnose.sh and purge-by-time.sh. Both the db-diagnose.sh and purge-by-time.sh scripts should be run on the **DS1** server by the **fxa** user.

The following procedures should only be used by AWIPS sites which have installed OB3.1.

The db-diagnose.sh script examines the Informix fxatext database and reports the number of products which exceed a criteria age. The db-diagnose.sh command line arguments are the product category and the criteria age. The product category is the 3 character AWIPS PIL NNN category ID such as MTR, TAF or ZFP. The criteria age is the minimum age in days. For example to see how many MTR category products are older than 100 days, the db-diagnose.sh command would be:

db-diagnose.sh MTR 100

The **db-diagnose.sh MTR 100** command creates the /tmp/MTR-old file which contains one entry for each MTR whose age exceeds 100 days. In this example, to determine exactly which MTR products exceed 100 days old, examine the contents of the /tmp/MTR-old file. In this example, to count the number of MTR products that are older than 100 days, issue the command:

wc -l /tmp/MTR-old

The db-diagnose.sh script can be used to examine each individual NNN category by running the db-diagnose.sh script against each individual NNN category and then examining the /tmp/NNN-old file. There is also an ALL option which can be used to examine every category in the database. The ALL option reports the top 10 NNN categories which exceed the criteria age. For example, to see the top ten products whose age exceeds 100 days, the command would be:

db-diagnose.sh ALL 100

When the db-diagnose.sh ALL 100 command was run on one AWIPS system, the following information was reported back:

The ten categories containing the most products at least 100 old:

480 FEX
488 RR6
851 FOS
863 TAF
14408 MTR
2183 MEX
2306 PIR
3293 WRK
3908 MAV
4056 FAN

The db-diagnose.sh ALL 100 command creates the /tmp/ALL-old file.

To delete old products from the Informix fxatext database, use the purge-by-time.sh script. The purge-by-time.sh command line arguments are the product category and the criteria age. The product category is the 3 character AWIPS PIL NNN category ID such as MTR, TAF or ZFP. The criteria age is the minimum age in days. For example to delete all of the MTR products which are more than 100 days old, the command would be:

purge-by-time.sh MTR 100

Here is a procedure for using the db-diagnose.sh and the purge-by-time scripts. **The purge-by-time.sh script should only be run after your AWIPS system has OB3.1 installed.**

A. Log into the **DS1** server at the **fxa** user.

B. Change directories to the **/home/awipsadm/scripts** directory.

C. Run the db-diagnose.sh command to determine the top 10 products whose age exceeds 100 days by entering the command:

./db-diagnose.sh ALL 100

D. Run the purge-by-time.sh command to delete products whose age exceeds 100 days. For example to delete the obsolete FAN products whose age exceeds 100 days, enter the command:

./purge-by-time.sh FAN 100

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